

Application Number 10/052,696
Amendment dated March 28, 2005
Responsive to Office Action mailed January 3, 2005

REMARKS

This Amendment is responsive to the Office Action dated January 3, 2005. Applicant has amended claims 1, 5, 8, 13-16, 18, 22, 28 and 29. Claims 1-34 are still pending.

In the Office Action, the Examiner rejected claims 1-27 and 29-34 under 35 U.S.C. 102(b) as being anticipated by Albrecht et al. (US 5,930,065) (hereafter Albrecht); and rejected claim 28 under 35 U.S.C. 103(a) as being unpatentable over Albrecht in view of Baca et al. (US 5,574,602) (hereafter Baca).

In response, Applicant has amended all of the independent claims to more clearly define the claimed inventions and more clearly distinguish the claimed inventions from the applied prior art. Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the amended claims. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Applicant has amended all pending claims to clarify that the modulated distances between adjacent parallel servo transitions are encoded to define position error signals such that a drive designed to expect essentially no modulated distances between adjacent parallel servo transitions on the medium will generate the position error signals. This feature is lacking from the Albrecht and Baca references. Accordingly, Applicant believes that all pending claims are now in condition for allowance.

Specifically, claim 1 now recites a linear recording medium comprising a pattern of time-based servo transitions including first servo transitions non-parallel to second servo transitions, wherein the first servo transitions define a series of parallel servo transitions having modulated distances between adjacent parallel servo transitions as a function of location of the first servo transitions on the medium, the modulated distances being encoded to define position error signals such that a drive designed to expect essentially no modulated distances between adjacent parallel servo transitions on the medium will generate the position error signals. Independent claims 5, 8, 16, 22 and 29 have also been amended to include features similar to the features recited in claim 1.

In the Office Action, the Examiner cited Albrecht as disclosing a servo pattern having a series of parallel servo transitions having modulated distances. The current amendments,

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however, clarify the distinction between the claimed invention and Albrecht. In particular, Albrecht fails to disclose or suggest modulated distances that are encoded to define position error signals such that a drive designed to expect essentially no modulated distances between adjacent parallel servo transitions on the medium will generate the position error signals.

In Albrecht, sets of servo marks are defined for each servo frame. While the distances between the various marks in any given set are modulated, the average distances between the sets of servo marks is held always constant in Albrecht. In this manner, Albrecht provides a mechanism for maintaining constant average distance between sets of servo marks for servo tracking purposes, but provides the ability to encode information into the different sets of marks by modulating distances between marks within a given servo frame.

In Albrecht, the modulated distances within a servo frame are used to encode information into the servo pattern. However, the modulated distances in Albrecht are not encoded to define position error signals such that a drive designed to expect essentially no modulated distances between adjacent parallel servo transitions on the medium will generate the position error signals, as required by Applicant's claims. To be sure, in Albrecht, the average distances between the different sets of servo marks is held constant. Since the average distances between the sets of servo marks is held constant, the pattern of Albrecht is not encoded with intentional position error signals. In view of this important distinction, the pending claims now patentably distinguish the applied prior art and should be in condition for allowance.

Unlike Albrecht, Applicant's claimed invention provides the ability to test and diagnose the servo response of data storage drives. This can very useful for drive manufacturers as a diagnostic tool to test the servo response of such drives. As claimed, the servo transitions are modulated to intentionally introduce position error signals into the pattern. In this manner, when the recording medium is used in a drive designed to expect essentially no modulated distances between adjacent parallel servo transitions on the medium, the drive will generate the position error signals, which are intentionally encoded by the modulated distances. In this case, the generated position error signals are not due to position error of the drive head with respect to the medium (as would be the case for normal servo tracking), but may be due to the fact that the position errors are intentionally introduced into the modulated pattern. Drive manufacturers can

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use the claimed invention as a diagnostic tool to intentionally introduce position error signals into the servo pattern so that the servo response of the drive can be tested.

Applicant also wishes to briefly comment on some of the Examiner's interpretations of Albrecht, which Applicant believes are incorrect. In the examination of previous claims 5 and 6, for example, the Examiner indicated that column 5, lines 1-15 of Albrecht was being interpreted as suggesting a drive that expects essentially no modulated distances between the servo transitions. Applicant respectfully submits that this is the improper interpretation of Albrecht.

In Albrecht, the drive *is* specifically designed to expect the modulation of Albrecht, and such modulation is done to encode information, but not to introduce position error signals, as required by Applicant's amended claims. More specifically, the drive of Albrecht is designed to calculate the average distance between the marks of successive frames rather than calculate only the distance between marks. This averaging by Albrecht is performed because the Albrecht system expects and accounts for the modulation of marks within a frame to encode information. The average distance between frames of Albrecht, however, remains constant so that conventional servo tracking techniques can be applied. In short, the drive of Albrecht *is* designed to interpret the information encoded in the modulation. Therefore, the drive of Albrecht clearly expects the modulation of marks within a frame.

To the extent that Albrecht teaches modulation of distances between time-based servo marks, the modulation is performed to encode information in the pattern, and the drive is designed to expect this information and interpret this information. In contrast, Applicant's claims require modulated distances between adjacent parallel servo transitions to be encoded to define position error signals so that a drive designed to expect essentially no modulated distances between adjacent parallel servo transitions on the medium will generate the position error signals. Again, Applicant's claimed invention may be used to assess the servo response of the drive.

In short, the amendments to the current claims should place the application into condition for allowance, as all pending claims have been clarified to indicate that the modulated distances between adjacent parallel servo transitions are encoded to define position error signals such that a drive designed to expect essentially no modulated distances between adjacent parallel servo

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transitions on the medium will generate the position error signals. This feature is lacking from Albrecht and Baca.

In addition, contrary to the Examiner's interpretation of Albrecht, Applicant submits that Albrecht does not disclose or suggest a drive that expects essentially no modulated distances between the servo transitions, e.g., as recited in independent claim 5. Instead, in Albrecht, the drive is designed to expect the modulation of Albrecht, which is added to encode information into the servo pattern.

For at least the reasons outlined above, Applicant believes that all claims in this application are in condition for allowance. With regard to the various dependent claims, Applicant reserves further comment at this time. However, Applicant does not acquiesce to any of the rejections or characterizations of the prior art, and reserves the right to further address other the features of the independent claims or dependent claims, if necessary.

Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 09-0069. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

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